

Macroscopic Color Variation in Clear Cell Renal Cell Carcinoma: A Novel Prognostic Indicator Reflecting the Tumor Microenvironment

Supplementary Information

Supplementary Fig. 1 Representative hematoxylin and eosin images illustrating the evaluation of pathological parameters. (a) Cytological phenotype, (b) vascularity-based architectural classification, and (c) immunophenotype

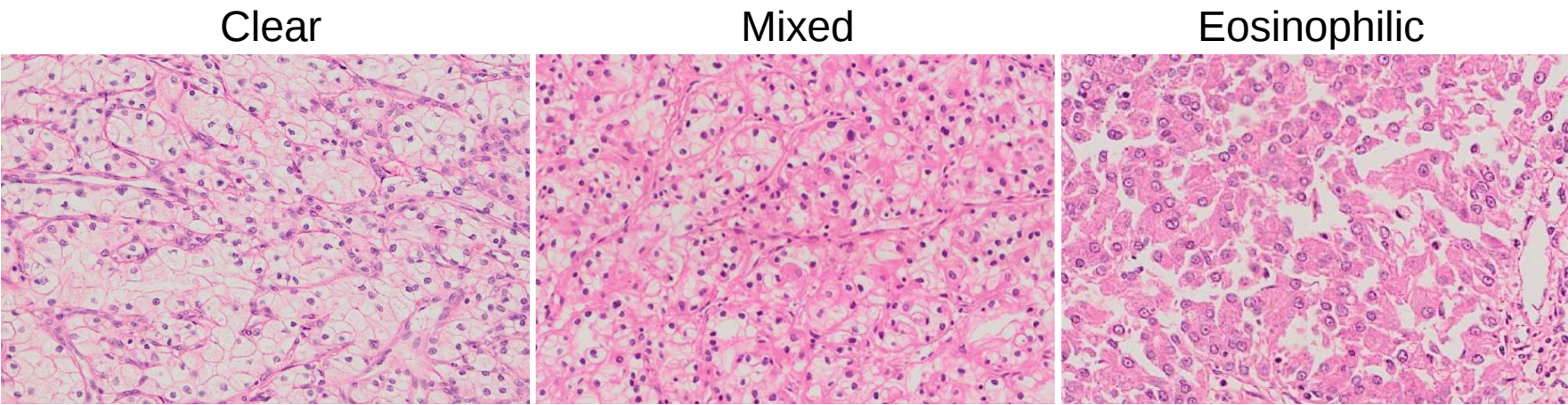
Supplementary Fig. 2 Macroscopic color tones and corresponding histological features. Representative macrophotographs illustrating the relationship between macroscopic color tones and corresponding histopathological features observed in hematoxylin and eosin (H&E)-stained sections are shown. A macroscopic yellow appearance associated with cyst-forming areas corresponds to WHO/ISUP grade 1–2, a clear cytoplasm, and category 1 (blue circles on H&E sections): compact/small nested (a) and macrocystic/microcystic (b) patterns. A pale yellow to beige appearance corresponds to WHO/ISUP grade 3, a mixed cytoplasm, and category 2 (green circles on H&E sections): alveolar/large nested patterns (c). Whitish areas correspond to WHO/ISUP grade 4, an eosinophilic cytoplasm, and category 3 (red circles on H&E sections): solid sheets (d) and sarcomatoid patterns (e). Tumor-type necrosis (orange circles on H&E sections) is frequently observed within or adjacent to category 3 areas (f)

Supplementary Fig. 3 Kaplan-Meier curves for conventional histological parameters. (a) World Health Organization/International Society of Urological Pathology grade, (b) cytological phenotype, (c) vascularity-based architectural classification, and (d) immunophenotype. RFS, recurrence-free survival; HR, hazard ratio; CI, confidence interval

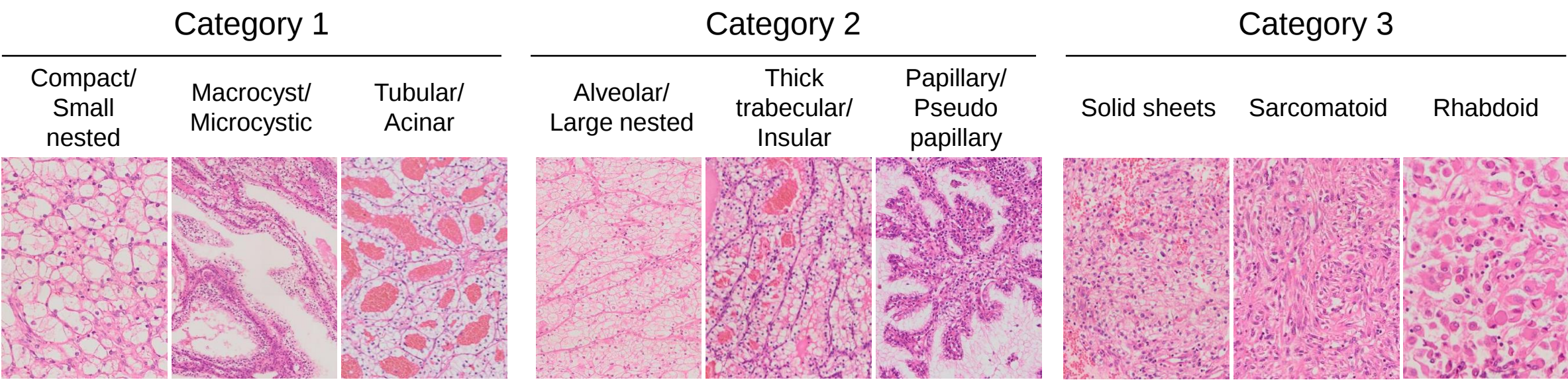
Supplementary Fig. 4 Macroscopic color variation in non-clear cell renal cell carcinoma (RCC). The correlation of macroscopic color with histological features in papillary RCC, chromophobe RCC, and collecting duct carcinoma

Supplementary Figure 1. Representative hematoxylin and eosin images illustrating the evaluation of pathological parameters.

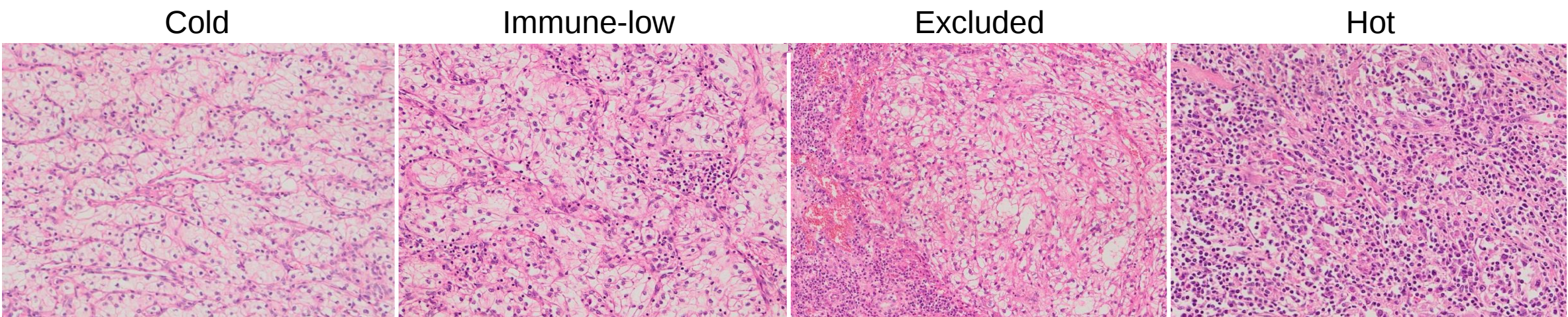
a Cytological phenotype



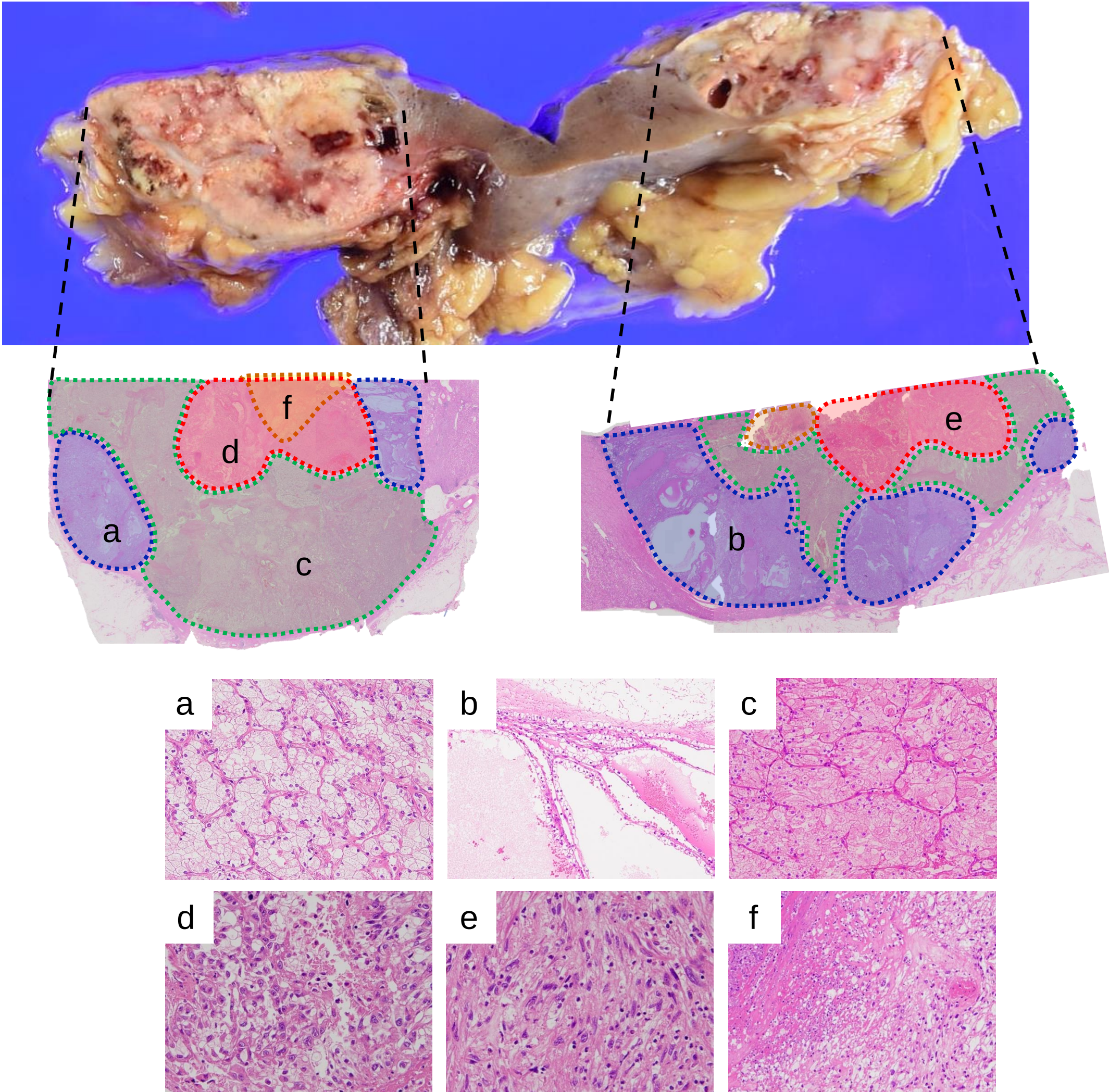
b Vascularity-based architectural classification



c Immunophenotype

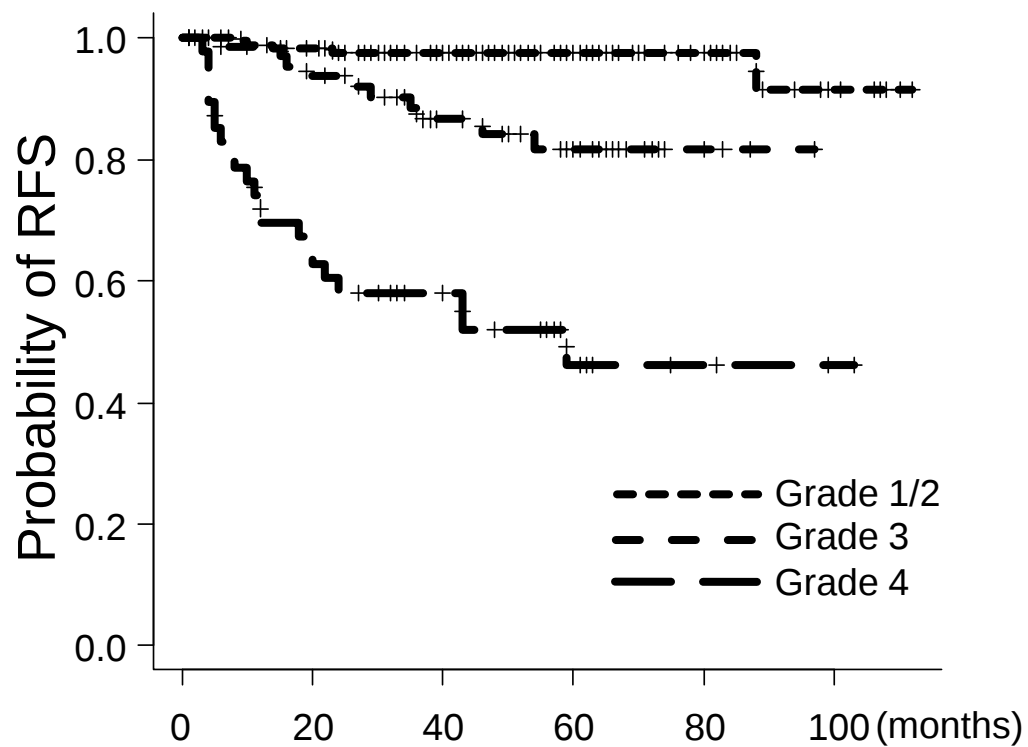


Supplementary Figure 2. Macroscopic color tone and corresponding histological features.



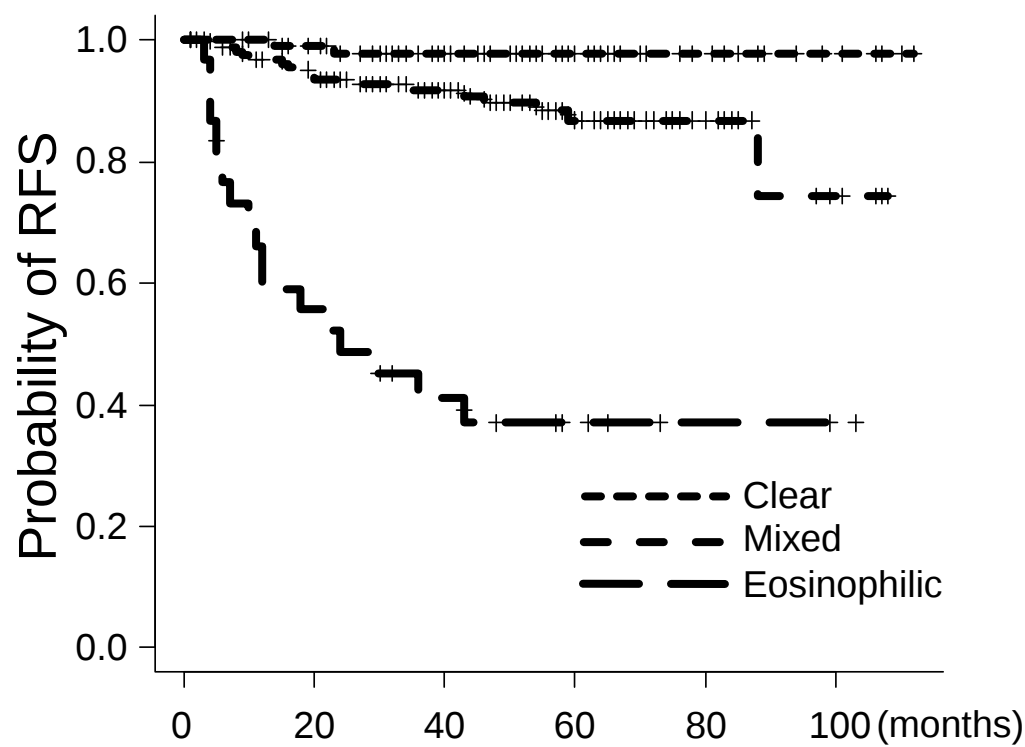
Supplementary Figure 3. Kaplan-Meier curves for conventional histological parameters.

a



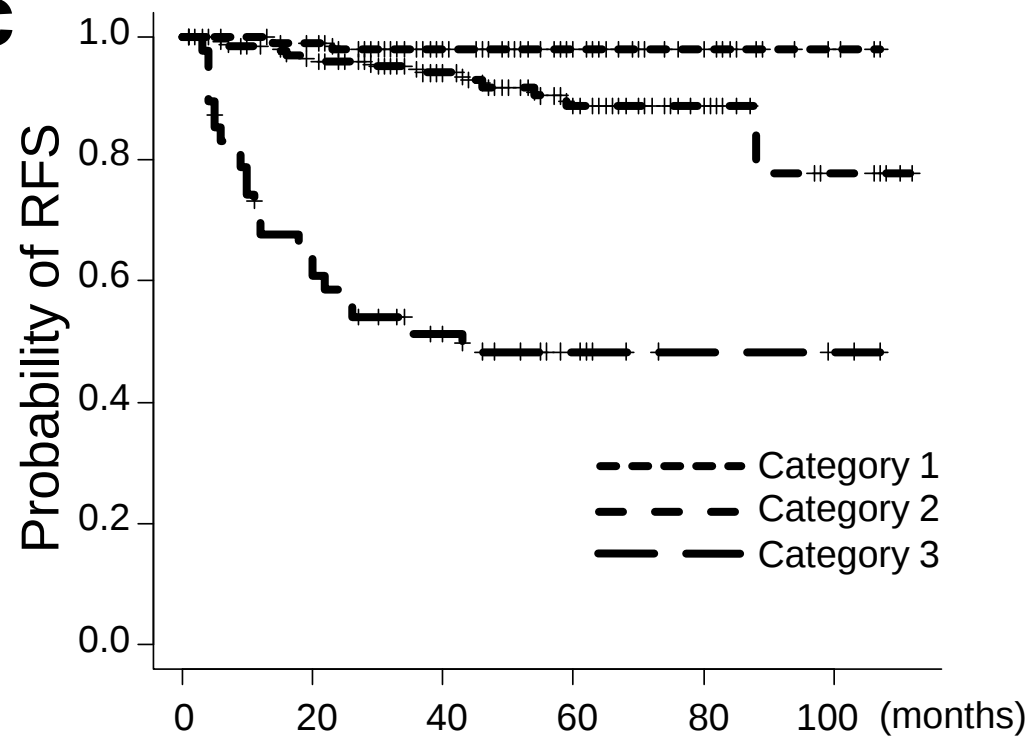
	HR	95%CI	P value
Grade 1/2	1 (reference)		
Grade 3	5.43	1.85—15.95	< 0.001
Grade 4	22.39	8.46—59.25	< 0.001

b



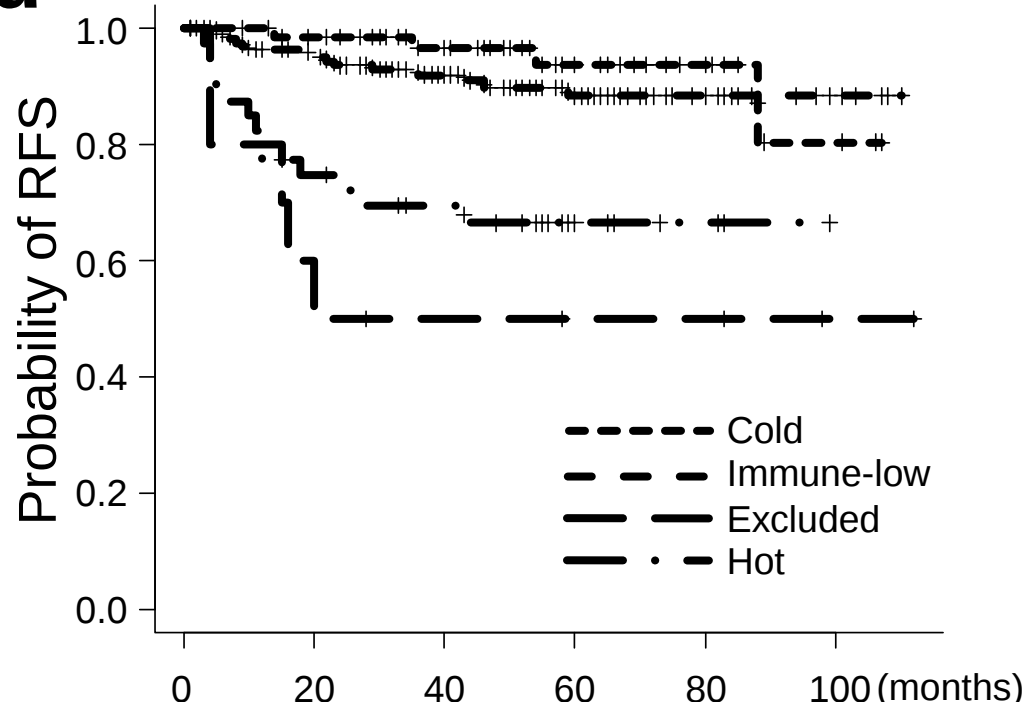
	HR	95%CI	P value
Clear	1 (reference)		
Mixed	5.65	1.30—24.46	0.021
eosinophilic	45.13	10.45—194.90	< 0.001

c



	HR	95%CI	P value
Category 1	1 (reference)		
Category 2	4.85	1.09—21.69	0.039
Category 3	36.23	8.53—153.90	< 0.001

d



	HR	95%CI	P value
Cold	1 (reference)		
Immunosuppressed	1.70	0.56—5.12	0.350
Excluded	11.12	2.97—41.63	< 0.001
Inflamed	6.84	2.23—21.00	< 0.001

Supplementary Figure 4. Macroscopic color variation of non-clear cell renal cell carcinomas.

